

Thermo Top Evo Parking Heater e1 00 0258

Installation documentation

Ford Focus

2.0 Diesel

from model year 2011

Left-hand drive vehicle



WARNING!

Hazard warning:

Incorrect installation or repair of Webasto heating systems may cause a fire or result in the emission of carbon monoxide, which can be fatal. Serious or fatal injuries can be caused as a result.



Specialist company training, technical documentation, specialised tools and equipment are required to install and repair Webasto heating and cooling systems. Only original Webasto parts must be used. For this, also see the catalog of air and water heater accessories from Webasto.

NEVER attempt to install or repair Webasto heating or cooling systems if you have not successfully completed the company training and thereby acquired the required technical skills, or if you do not have access to the required technical documentation, tools and equipment needed to carry out correct installation and repairs.

ALWAYS follow all Webasto installation and repair instructions and observe all warnings.

The initial startup is to be executed with the Webasto Thermo Test Diagnosis.

Webasto does not accept any liability for defects and damage that are attributable to installation by untrained staff.

Table of contents

Validity	2	Preparing installation location	14
Heater/installation kit	3	Preparing heater	14
Foreword	3	Installing heater	16
General instructions	3	Coolant circuit	17
Special tools	3	Combustion air	20
Explanatory notes on document	4	Fuel	21
Preliminary work	5	Exhaust gas	24
Heater installation location	5	Final Work	25
Preparing electrical system	6	Operating instructions for end customer	26
Electrical system	7		
Fan control for manual air conditioning	8		
Automatic air-conditioning fan control	10		
Remote option (Telestart)	13		

Validity

Manufacturer	Model	Type	EG-BE-No. / ABE
Ford	Focus	DYB	e13 * 2007 / 46 * 1138 *

Engine type	Engine model	Output in kW	Displacement in cm ³
UF	Diesel	103	1997

Vehicle and engine types, equipment variants and national specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

The installation location of the digital timer should be confirmed with the end customer before installation.

Heater/installation kit

Quantity	Designation	Order No.:
1	Basic delivery scope <i>Thermo Top Evo</i>	See price list
1	Installation kit Ford Focus 2.0 Diesel	1317613A
1	Heater control	See price list

To be ordered additionally for the installation of digital timer:

Quantity	Designation	Order No.:
1	Extension of clock wiring harness	70813B

Foreword

This installation documentation applies to Ford Focus Diesel vehicles - for validity, see page 2 - from model year 2011 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation.

However, where this is the case, the stipulations in this "installation documentation" the "operating instructions" and "installation instructions" of the *Thermo Top Evo* should be observed.

The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.

General instructions

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wires and tie back.

Sharp edges must be provided with rub protection (cut-open fuel hose)!

Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329). When installing an IPCU, the corresponding settings must be checked or adjusted before installation.

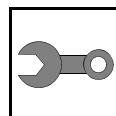
Special tools

- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Punching tool 60 mm dia.

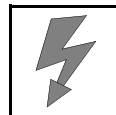
Explanatory notes on document

To provide you with a quick overview of the individual working steps, you will find an identification mark on the outside top right corner of the page in question.

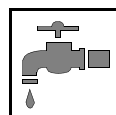
Mechanical system



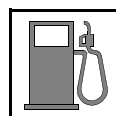
Electrical system



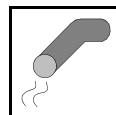
Coolant circuit



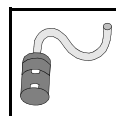
Fuel



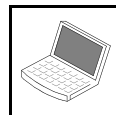
Exhaust gas



Combustion air



Software



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



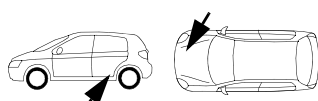
Specific risk of fire or explosion.



Reference to general installation instructions of Webasto components or to the manufacturer's vehicle-specific documents.



Reference to a special technical feature.



The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

All dimensions are in mm!

Tightening torque of 5x13 heater bolts = 8Nm!

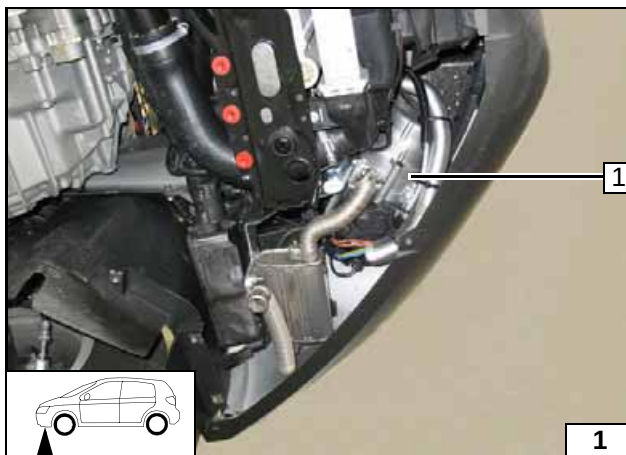
Tightening torque of 5x15 bolt of water connection piece retaining plate = 7Nm!

Preliminary work

WARNING!

- Open the fuel tank cap and vent the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove year that does not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Declamp and remove battery.
- Remove engine cover
- Discharge coolant according to the manufacturer's instructions
- Remove intake manifold
- Remove engine override protection
- Remove underbody trim at the rear of the tank
- Detach heat protection trim of exhaust system in the area of the tank
- Remove tank
- Remove the footwell trim on the front passenger side.
- Remove the glove compartment.
- Remove shift lever trim
- Remove trim of centre console
- Remove A/C control panel in accordance with manufacturer's instructions.
- Remove A-pillar trim of the footwell on the front passenger side (only with Telestart)

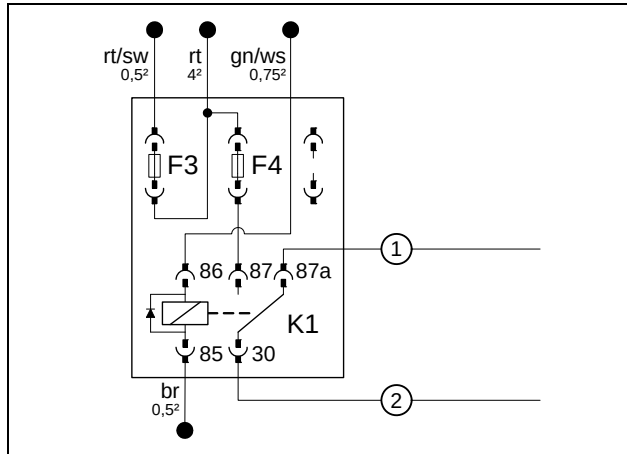
Remove page 26 "Operating instructions for end customer" and add to the vehicle operating instructions.



Heater installation location

1 Heater

Installation location



Preparing electrical system

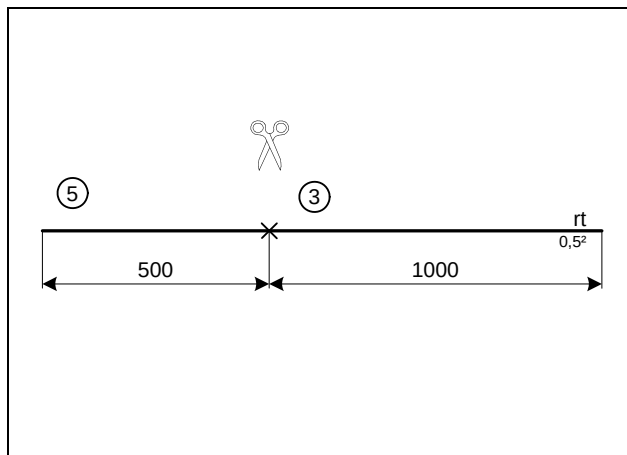
Wire sections retain their numbering in the entire document.

All equipment

Connect wires to socket of K1 relay. Insert F4 25A fuse. K1 relay is inserted only after installing the fuse holder.

- ① Red (rt) wire 4²
- ② Black (sw) wire 4²

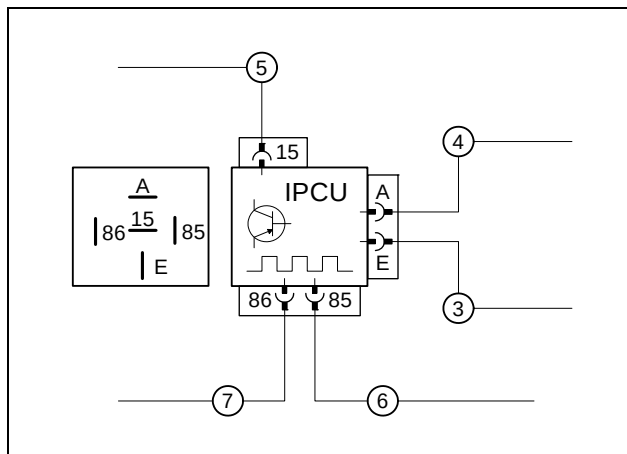
Preparing K1 relay, inserting F4



Automatic air-conditioning

Wire sections retain their numbering in the entire document.

Cutting wires to length



Connect wires to IPCU socket. IPCU view on contact side. The IPCU included in the kit is pre-programmed with the following settings:

Duty cycle: 37%
Frequency: 400Hz
Voltage: 3.6V
Function: Low side

The settings are to be checked during the function check on the vehicle, and adjusted if necessary.

Pull wires **3** and **4** into the attached protective sleeving.

- ③ Red (rt) wire 0.5²
- ④ Black (sw) wire 0.5²
- ⑤ Red (rt) wire 0.5²
- ⑥ Brown (br) wire 0.5²
- ⑦ Green/white (gn/ws) wire 0.5²

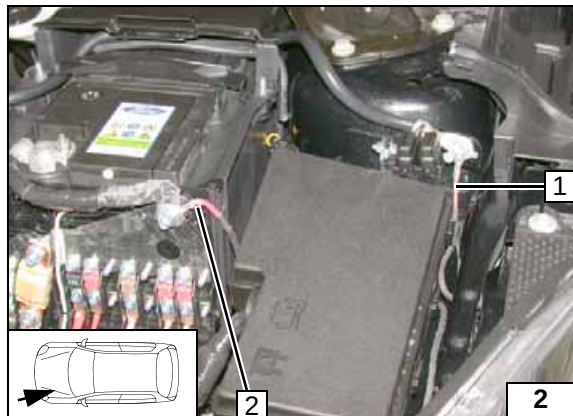
Premounting IPCU



Electrical system

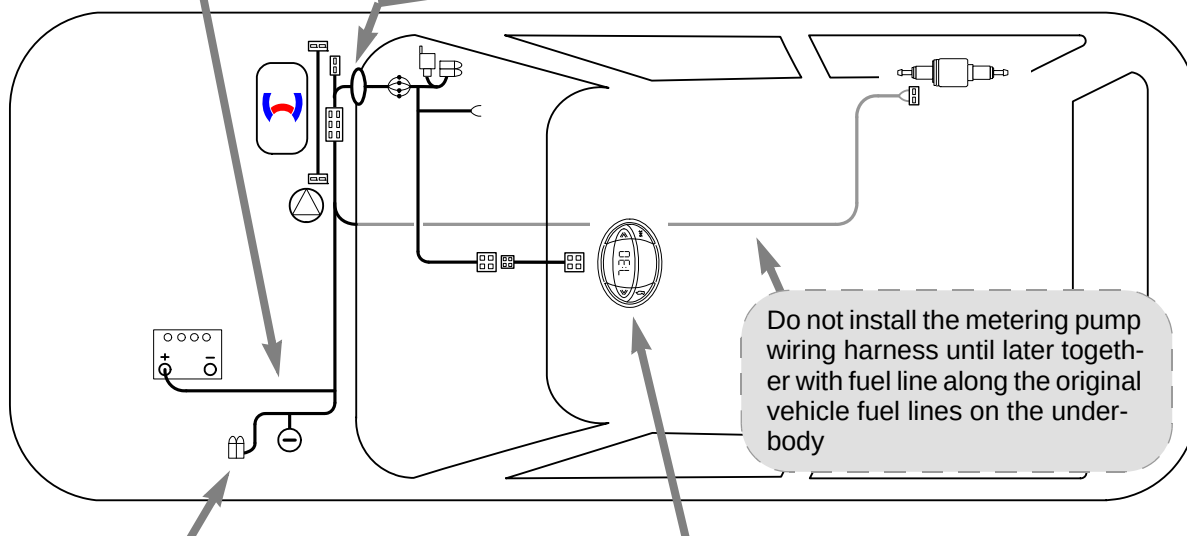
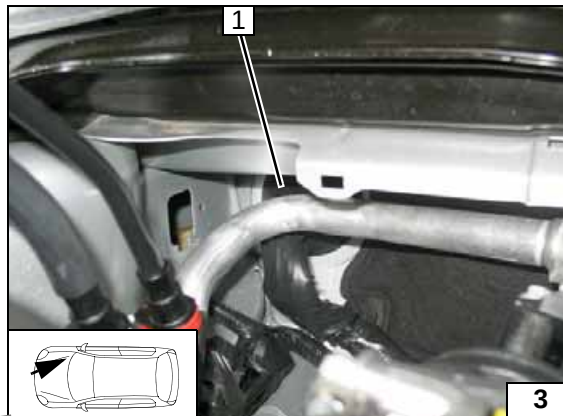
Plus and earth wire

- 1 Earth wire, 8 mm dia. cable lug at original vehicle earth support point
- 2 Positive wire on positive battery terminal

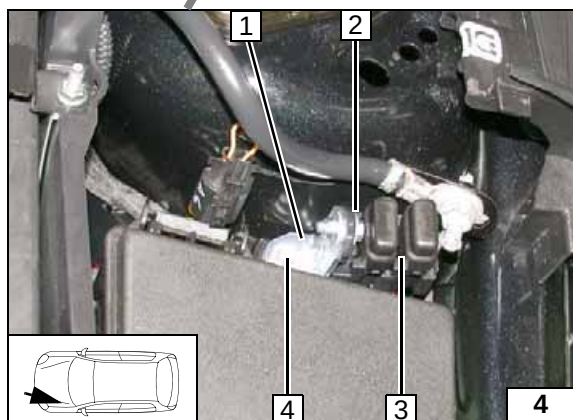


Wiring harness pass through

- 1 Protective rubber plug

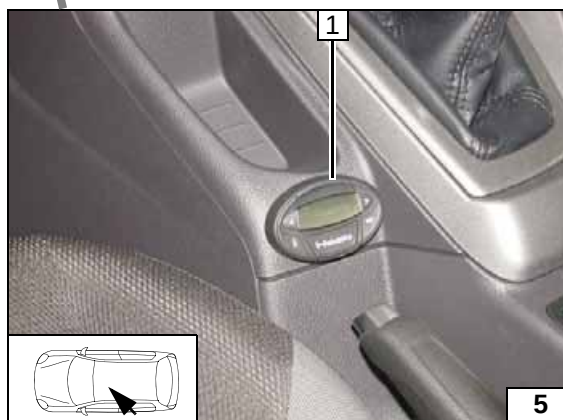


Wiring harness routing diagram (manual A/C system)



Fuse holder of engine compartment

- 1 Angle bracket
- 2 M5x16 bolt, large diameter washer [2x], retaining plate of fuse holder, nut
- 3 Fuses F1-2
- 4 M6x20 bolt, flanged nut, existing hole



Digital timer

Use clock cable extension when installing digital timer.

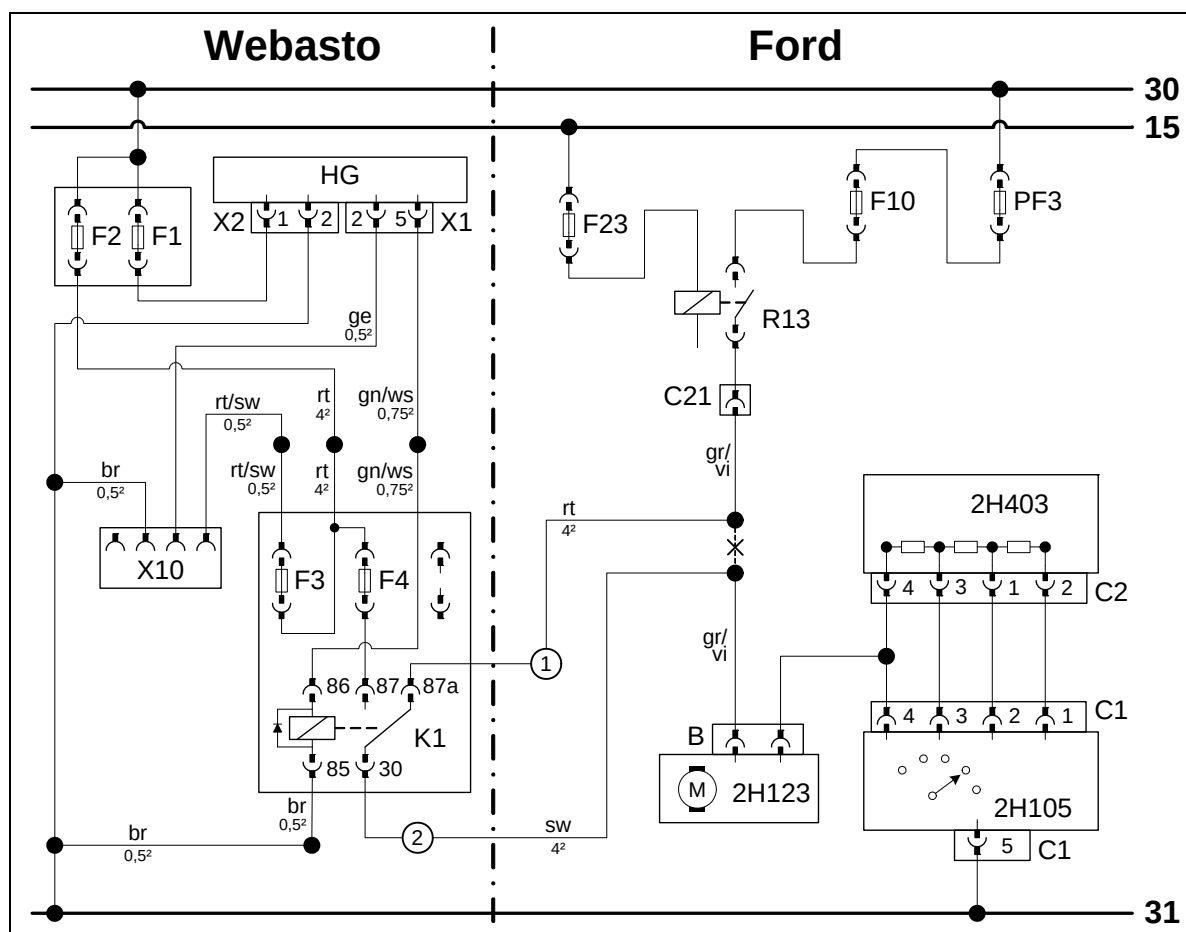
- 1 Digital timer



Fan control for manual air conditioning

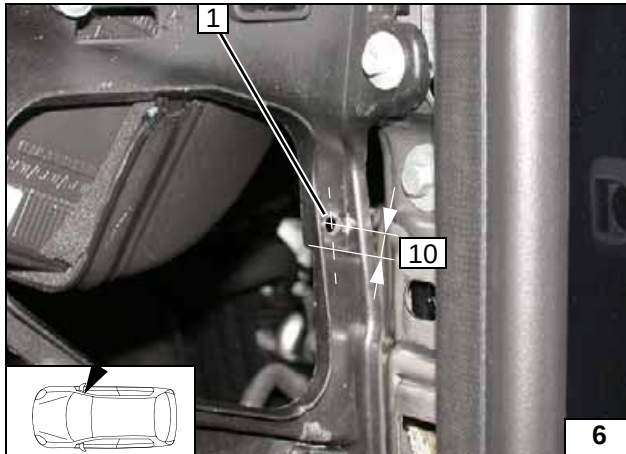


Wiring diagram



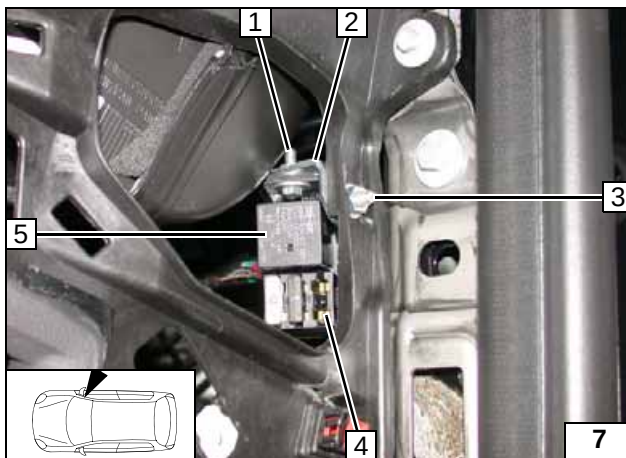
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	2H403	Resistor group	rt	red
X1	6-pin heater connector	C2	Connector 2H403	sw	black
X2	2-pin heater connector	2H123	Fan motor	ge	yellow
X10	4-pin connector Heater control	B	Connector 2H123	gn	green
K1	Fan relay	2H105	Fan switch	or	orange
F1	Fuse 20A	C 1	Connector 2H426	ws	white
F2	Fuse 30A	C21	Socket connection	br	brown
F3	Fuse 1A	R13	Fan relay	gr	gray
F4	Fuse 25A	PF3	Fuse 100A	vi	violet
		F10	Fuse 40A		
		F23	Fuse 5A	X	Cutting point
				Wiring colours may vary.	

Legend



1 6.5 mm dia. hole

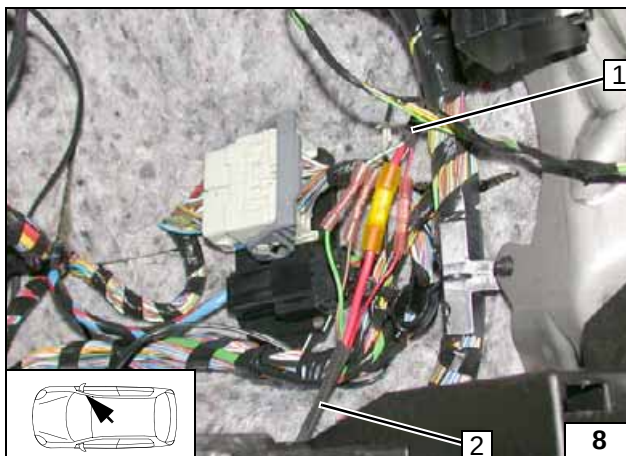
Hole for passenger compartment fuse holder



Mount K1 relay 5 after installation.

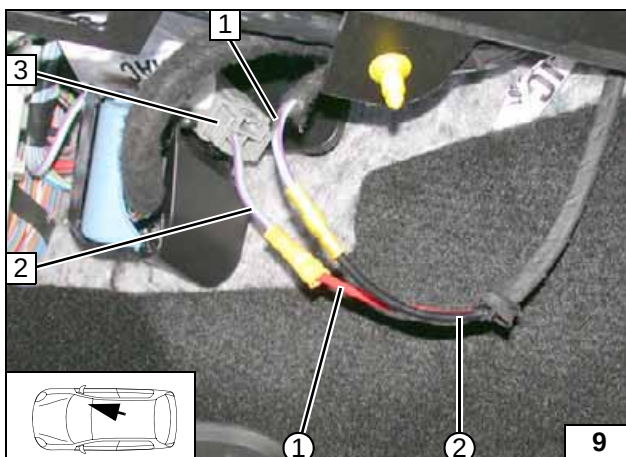
- 1 M5x16 bolt, large diameter washer [2x], nut
- 2 Angle bracket
- 3 M6x20 bolt, flanged nut
- 4 Fuse holder of passenger compartment

Mounting fuse holder of passenger compartment



Produce connections as shown in wiring diagram. Connect wiring harness of passenger compartment fuse holder 2 with wiring harness of heater 1 according to wiring diagram, so that wires of the same colour are connected to each other.

Connecting wiring harnesses



Connect to socket connector C21 3 Pin 1 before the fan motor.
Produce connections as shown in wiring diagram.

- 1 Gray/violet (gr/vi) wire to fan motor 2H123
- 2 Gray/violet (gr/vi) wire to fan relay R13
- ① Red (rt) wire from K1/87a
- ② Black (sw) wire of K1/30

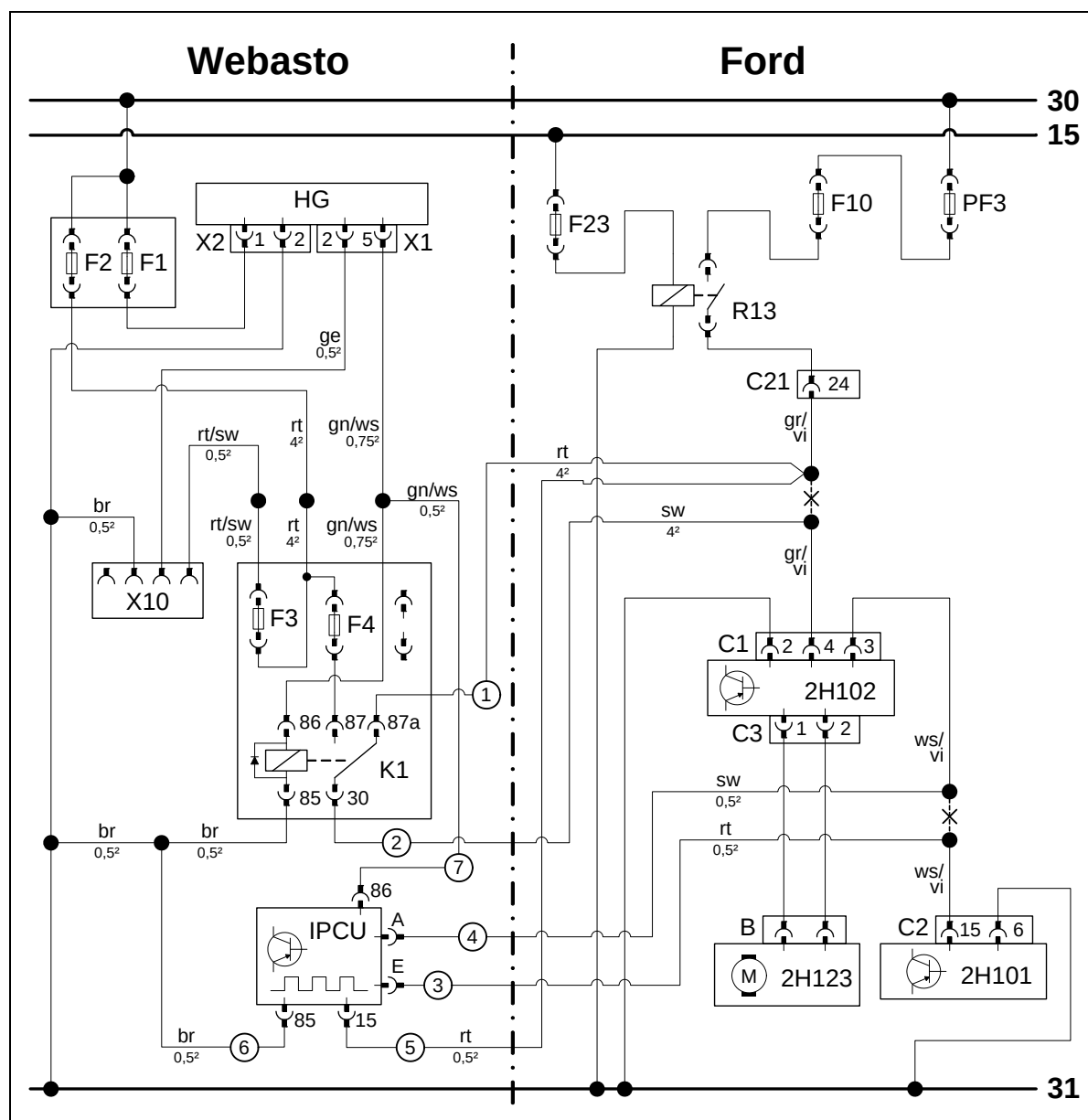
Connecting fan motor



Automatic air-conditioning fan control

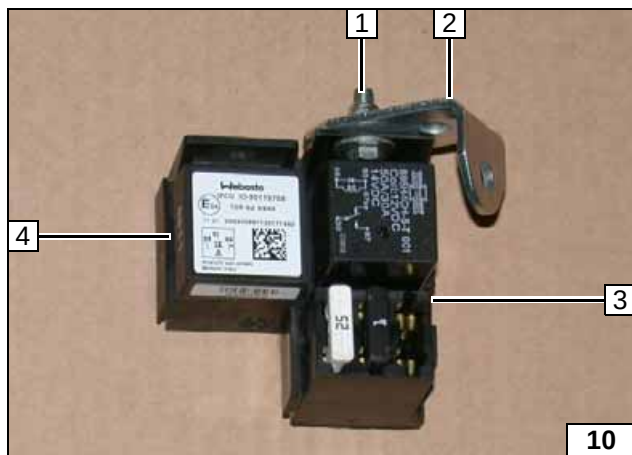


Wiring diagram



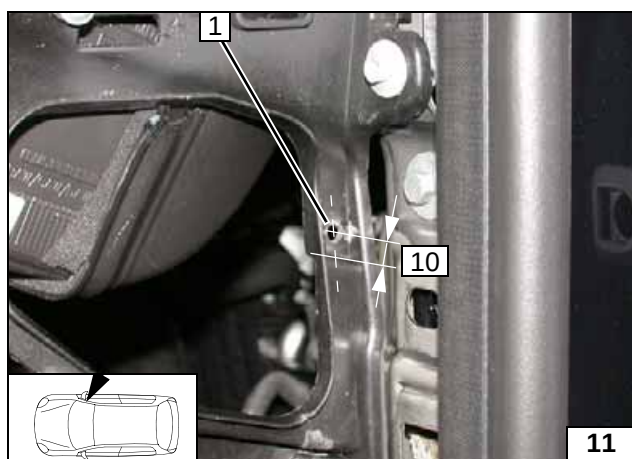
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	2H102	Fan controller	rt	red
X1	6-pin heater connector	C1	Connector 2H102	sw	black
X2	2-pin heater connector	C3	Connector 2H102	ge	yellow
X10	4-pin connector Heater control	2H123	Fan motor	gn	green
K1	Fan relay	B	Connector 2H123	br	brown
F1	Fuse 20A	2H101	A/C control unit	ws	white
F2	Fuse 30A	C 2	Connector 2H101	gr	gray
F3	Fuse 1A	C21	Socket connection	vi	violet
F4	Fuse 25A	R13	Fan relay		
IPCU	Pulse width modulator	PF3	Fuse 100A		
IPCU settings:		F10	Fuse 40A		
Duty cycle: 37%		F23	Fuse 5A		
Frequency: 400Hz					
Voltage: 3.6V					
Function: Low side				X	Cutting point
				Wiring colours may vary.	

Legend



- 1 M5x16 bolt, large diameter washer [2x], nut
- 2 Angle bracket
- 3 Fuse and relay socket
- 4 Mount IPCU socket

Premounting K1 relay



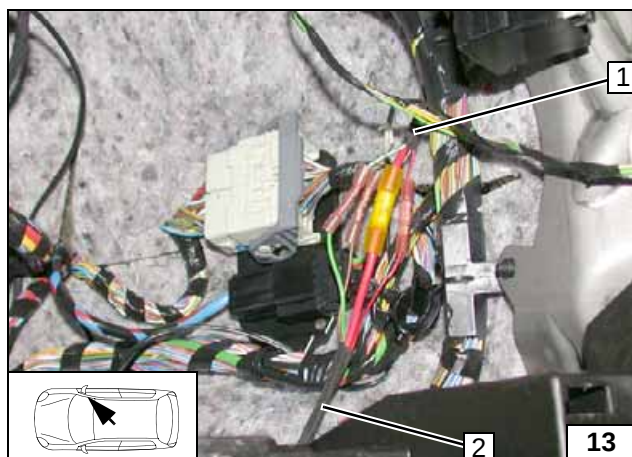
- 1 6.5 mm dia. hole

Hole for passenger compartment fuse holder



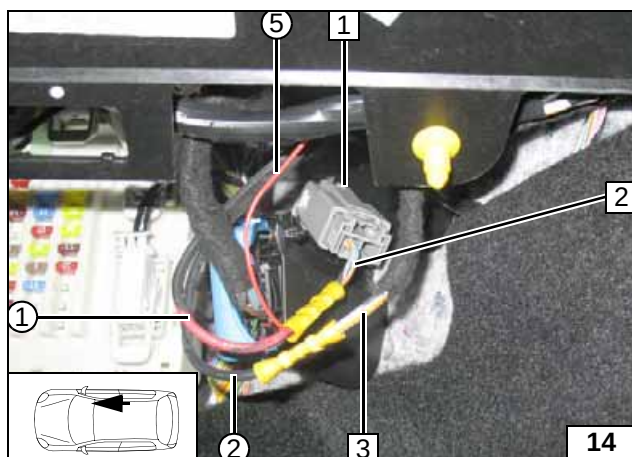
- 1 M6x20 bolt, flanged nut

Mounting fuse holder of passenger compartment



Produce connections as shown in wiring diagram. Connect wiring harness of passenger compartment fuse holder 2 with wiring harness of heater 1 according to wiring diagram, so that wires of the same colour are connected to each other.

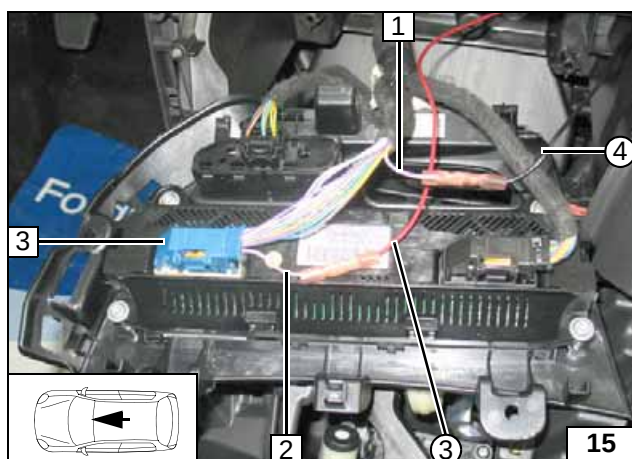
Connecting wiring harnesses



Connect to socket connector C21 **1** Pin 1 before the fan module.
Produce connections as shown in wiring diagram.

- 2** Green/orange (gr/or) wire to fan relay R13
- 3** Green/orange (gr/or) wire to fan controller 2H102
- ①** Red (rt) wire from K1/87a
- ②** Black (sw) wire of K1/30
- ⑤** Red (rt) wire of IPCU 15

**Connect-
ing fan
controller**

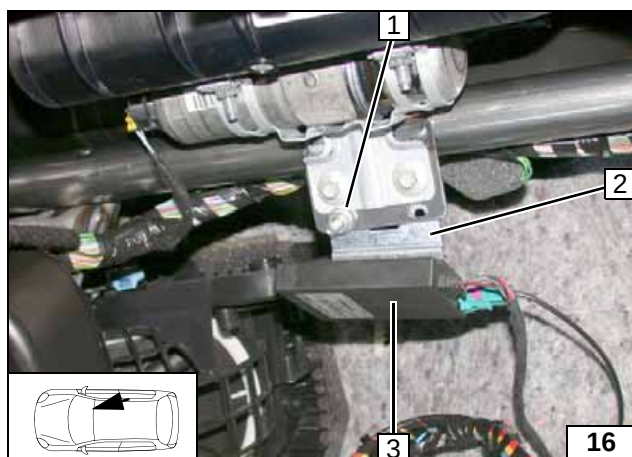


Connect to connector C2 **3** Pin15 from A/C control unit.
Produce connections as shown in wiring diagram.

- 1** White/violet (ws/vi) wire to fan controller 2H102
- 2** White/violet (ws/vi) wire from connector C2, Pin 15
- ③** Red (rt) wire of IPCU/E
- ④** Black (sw) wire of IPCU/A

**Connect-
ing A/C
control
unit**





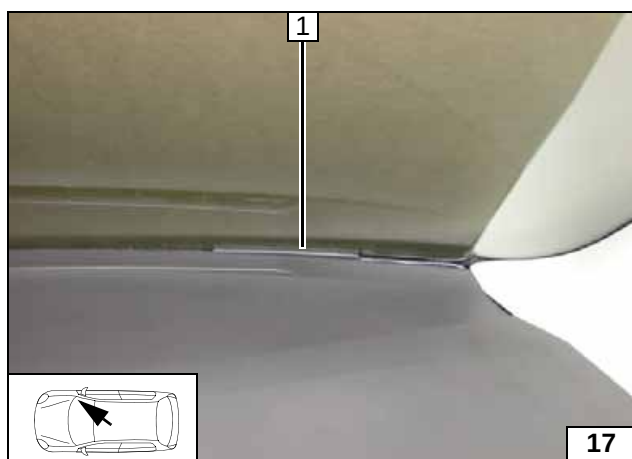
Remote option (Telestart)

Angle down bracket of receiver 2 as shown.

- 1 M6x20 bolt, flanged nut, existing hole
- 3 Receiver

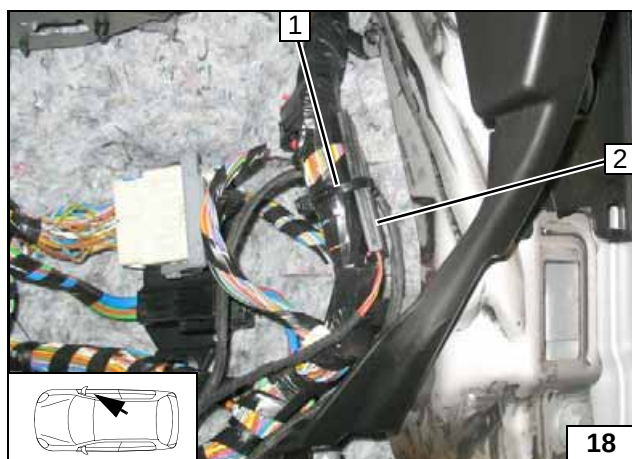


Mounting receiver



- 1 Antenna

Mounting antenna

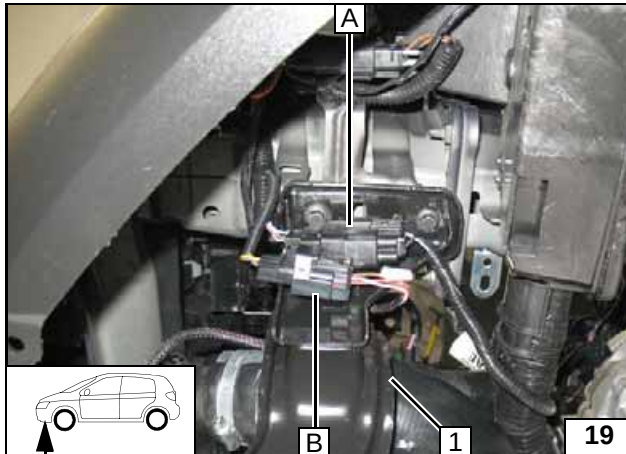
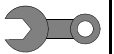


Temperature sensor T100 HTM

Fasten temperature sensor 2 with cable tie 1 to original vehicle wiring harness.



Mounting temperature sensor

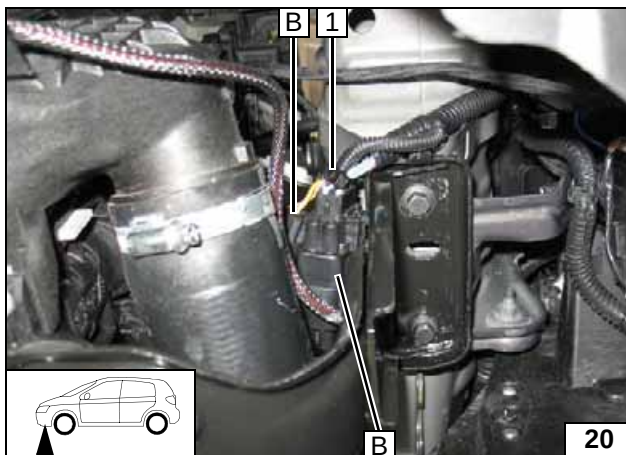


Preparing installation location

Dismantle connector **A** and **B** and route behind cross member **1**.



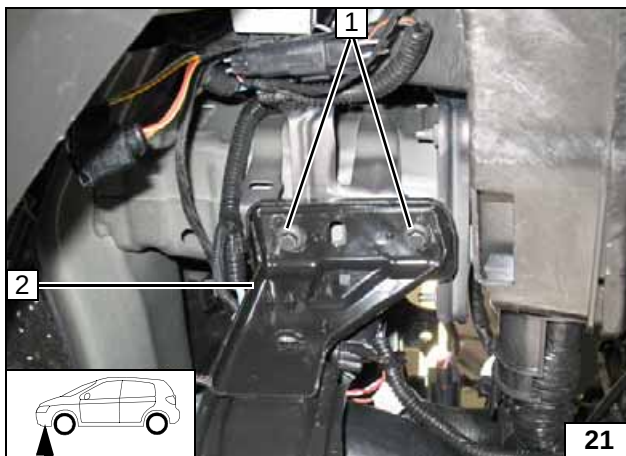
**Removing
connector**



Insert connector **A** in the existing holes. Fasten connector **B** to **1** connector **A** with the help of a cable tie.



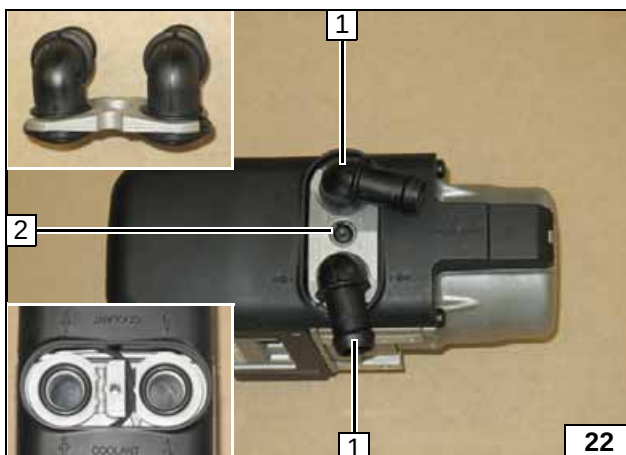
**Mounting
connector**



Dismantle original vehicle bolt **1** [2x]. Support cross member **2** with suitable resources. The bolts will be reused.



**Dismantling
bolts**

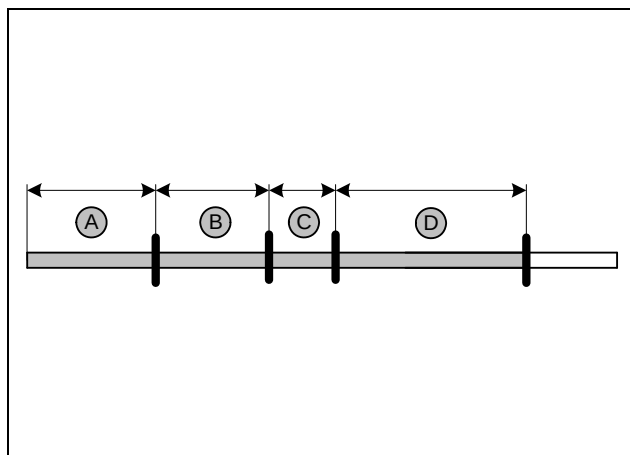


Preparing heater

- 1** Coolant connecting piece, sealing ring [2x each]
- 2** 5x15 self-tapping bolt, retaining plate of coolant connecting pieces



**Mounting
coolant
connecting
pieces**

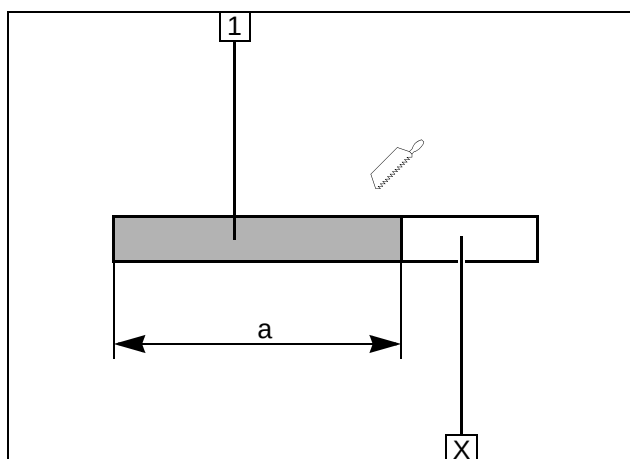


Discard section X.

- A = 440
- B = 270
- C = 60
- D = 720



Cutting hose to length

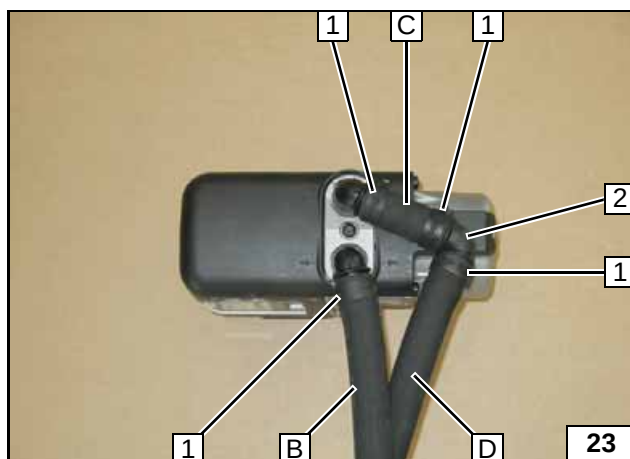


Discard section X.

- 1 Combustion air pipe
- a = 640

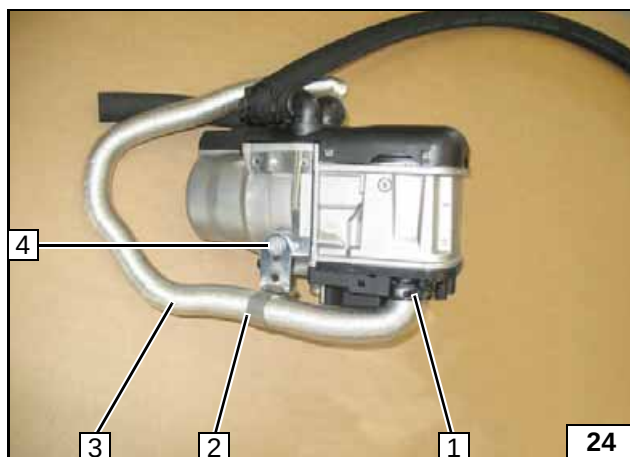


Cutting combustion air pipe to length



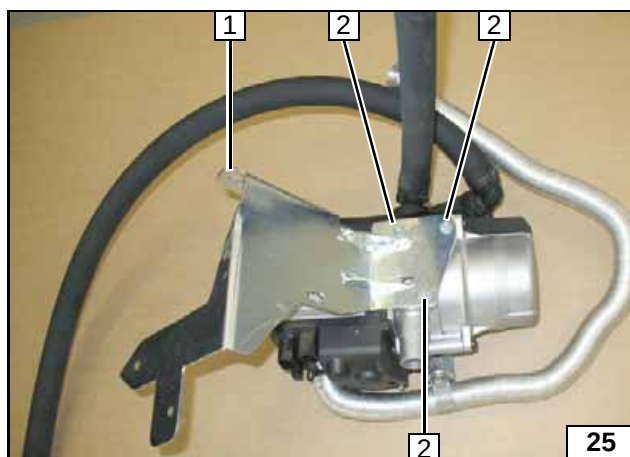
- 1 25 mm dia. spring clip [4x]
- 2 90° 18x18 connecting pipe

Mounting coolant hoses



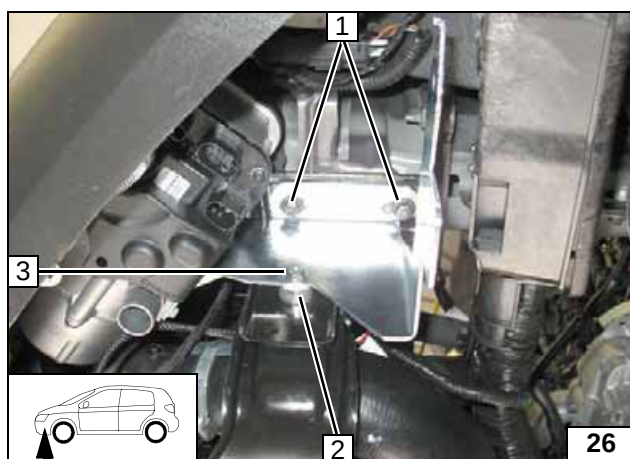
- 1 25 mm dia. spring clip
- 2 P-clamp, M6x20 bolt, flanged nut
- 3 Combustion air pipe
- 4 Self-tapping bolt, large diameter washer, angle bracket

Mounting combustion air pipe



- 1 Bracket
- 2 5x13 self-tapping bolt [3x]

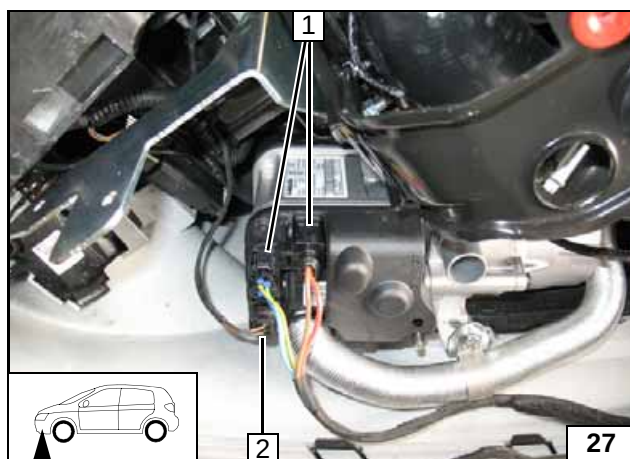
**Mounting
bracket**



Installing heater

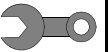
- 1 Original vehicle bolt [2x]
- 2 10mm spacer
- 3 M6x25 bolt, existing hole, flanged nut

**Mounting
heater**



- 1 Mount wiring harness of heater [2x]
- 2 Mount wiring harness of circulating pump

**Connect-
ing wiring
harness**



Coolant circuit

WARNING!

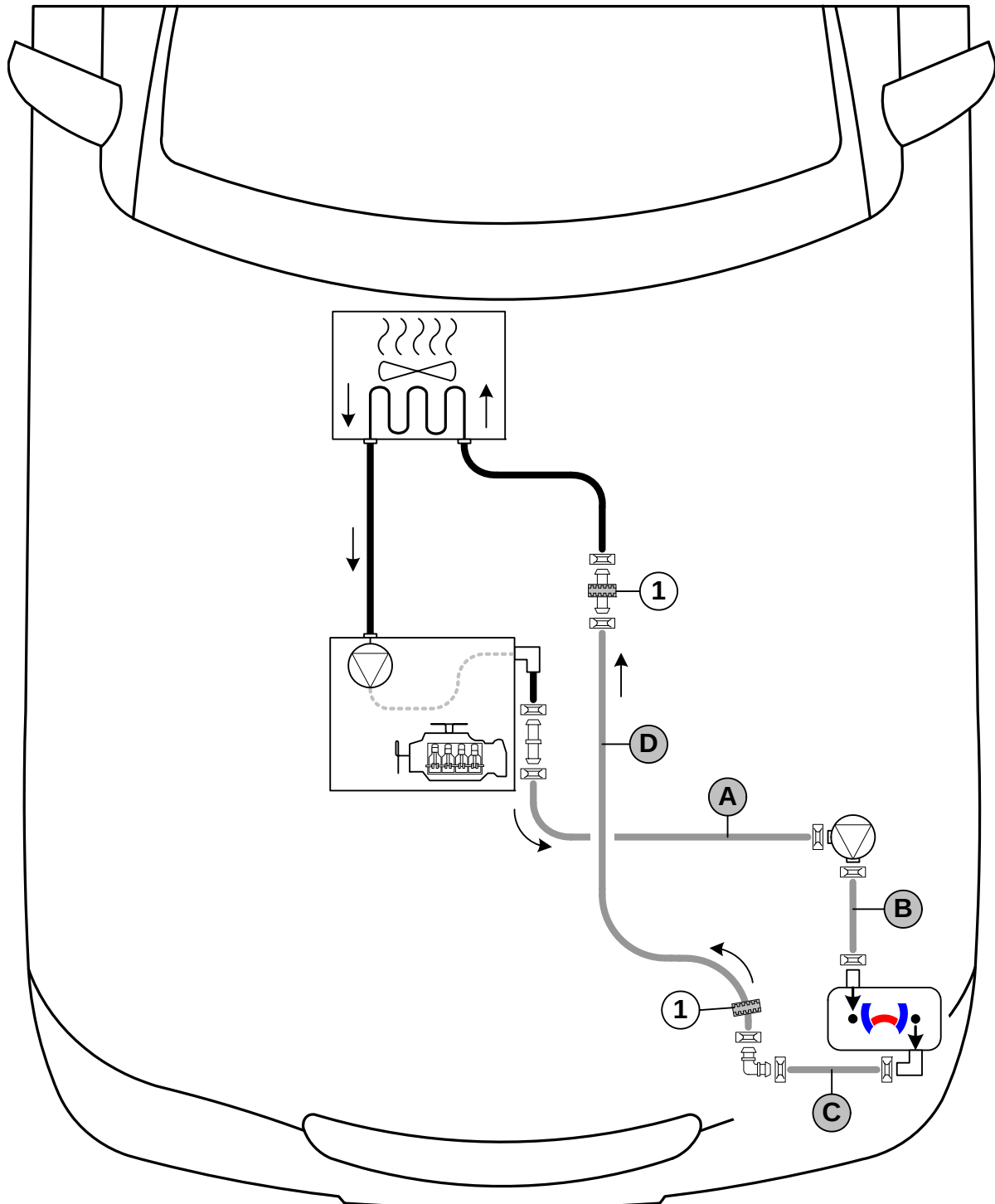
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. When installing the hoses, the heater must be filled with coolant.

The connection should be "inline" based on the following diagram:

The displayed coolant circuit is meant primarily for passenger compartment heating.



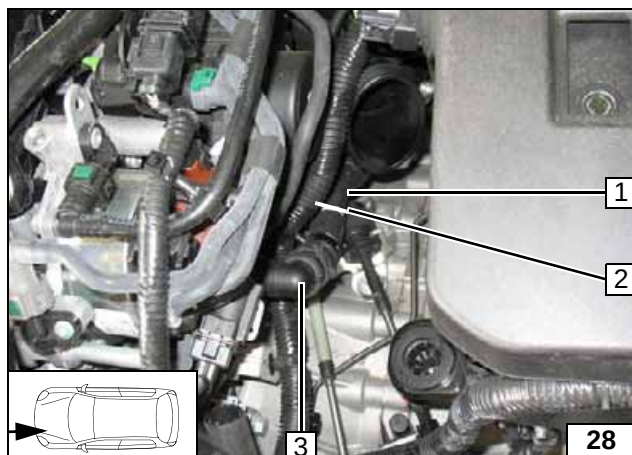
Hose routing diagram



All spring clips  = 25 mm dia.

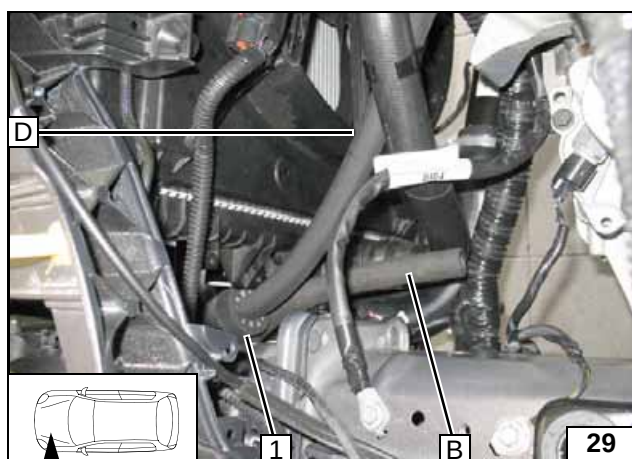
All connecting pipes  and  = 18x18 dia.





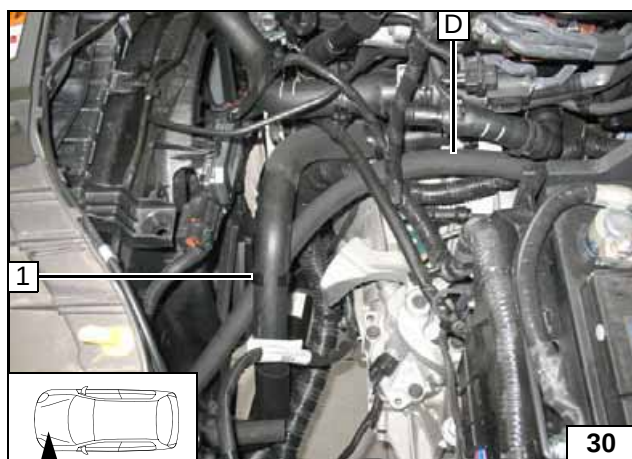
- 1 Hose section of heat exchanger inlet
- 2 Cutting point
- 3 Engine outlet

Cutting point



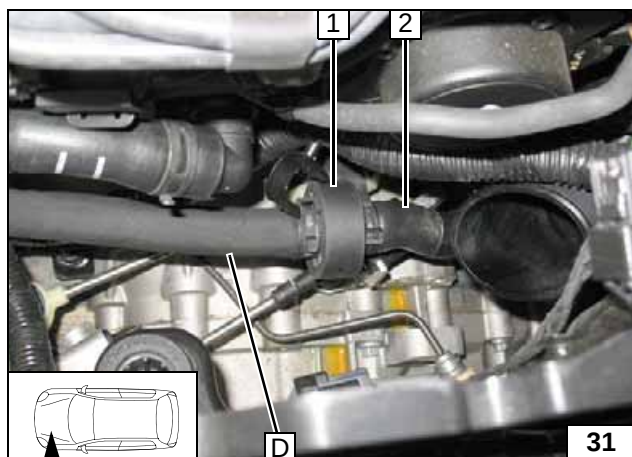
- 1 Black (sw) rubber isolator

Routing hose D



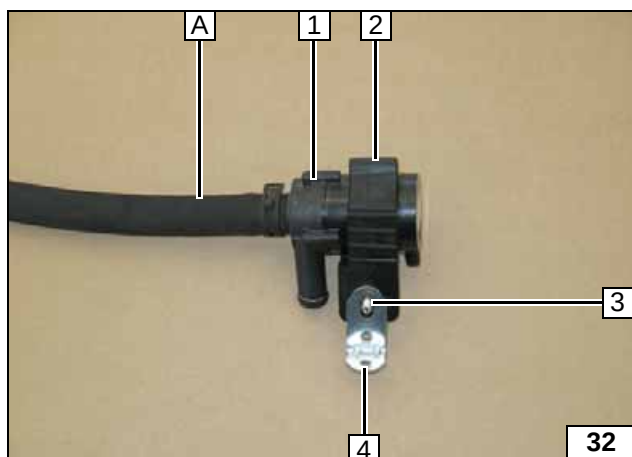
- 1 Hose bracket

Routing hose D



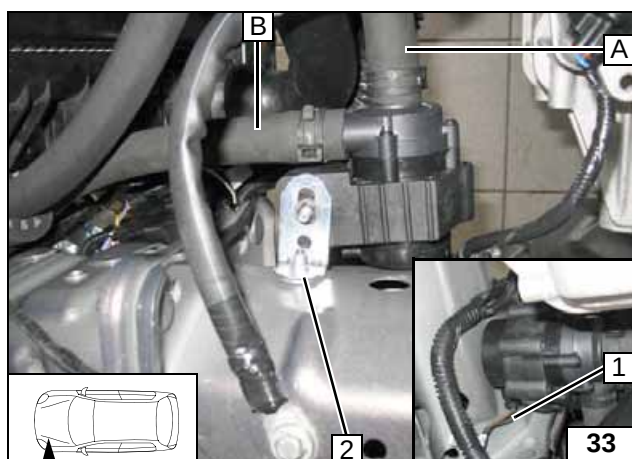
- 1 Black (sw) rubber isolator
- 2 Hose on heat exchanger inlet

Connect-
ing heat
exchanger
inlet



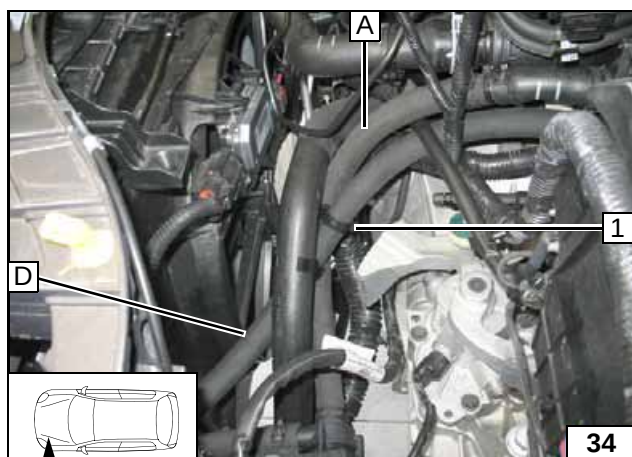
- 1 Circulating pump
- 2 Circulating pump bracket
- 3 M6x25 bolt, tubular rivet, pin lock
- 4 Angle bracket

Premounting circulating pump



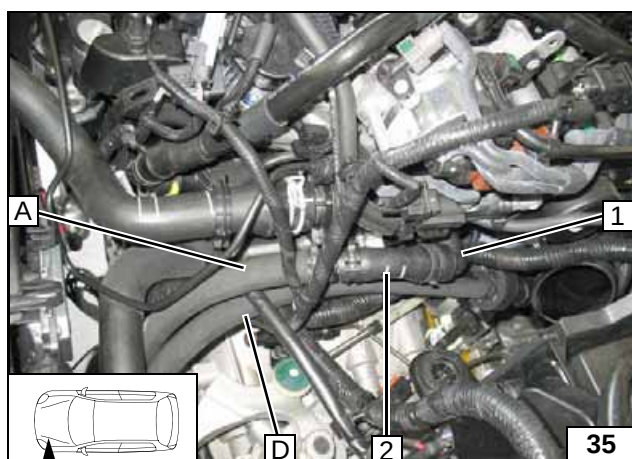
- 1 Mount wiring harness of circulating pump
- 2 Plate nut, existing stud bolt

Mounting circulating pump



- 1 Hose bracket

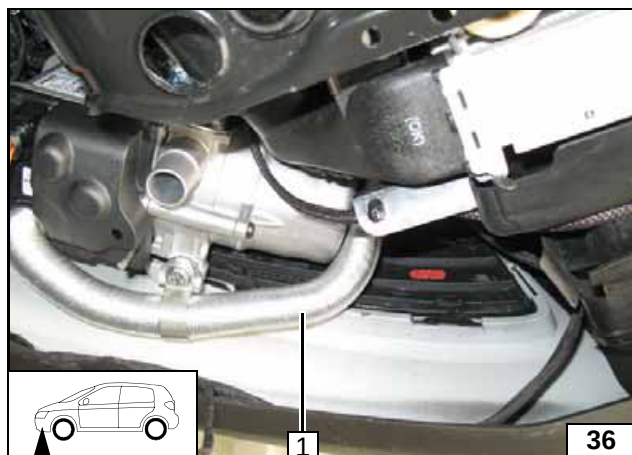
Routing hose A



Align hoses. Ensure sufficient distance from neighbouring components, or correct.

- 1 Connection of engine outlet twisted by approx. 180°
- 2 Hose of engine outlet

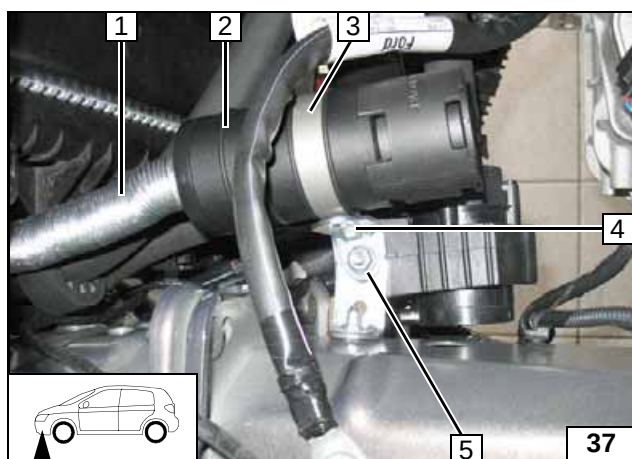
Connecting engine outlet



Combustion air

Route combustion air pipe 1 to installation location of circulating pump.

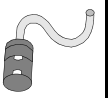
Routing combustion air pipe



- 1 Combustion air pipe
- 2 Silencer
- 3 51 mm dia. clamp
- 4 Angle bracket, M5x16 bolt, flanged nut
- 5 Flanged nut

Mounting silencer





Fuel

CAUTION!

Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

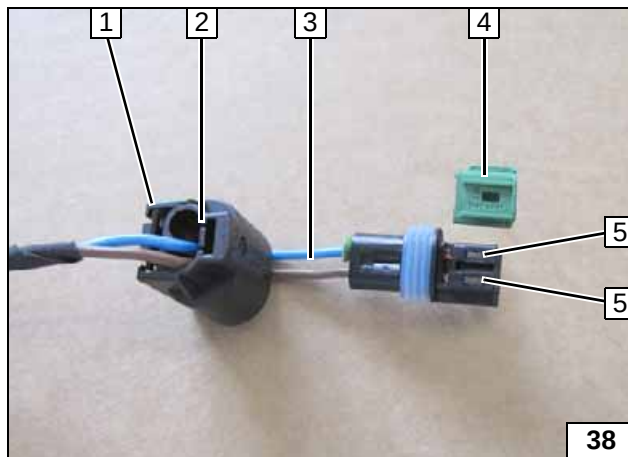
Collect any discharged fuel in an appropriate container.

Install fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.

Mount the fuel line and wiring harness with rub protection on sharp edges.

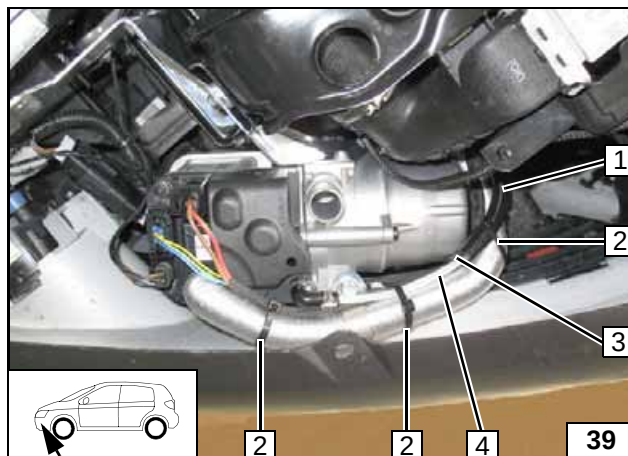
WARNING!

The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



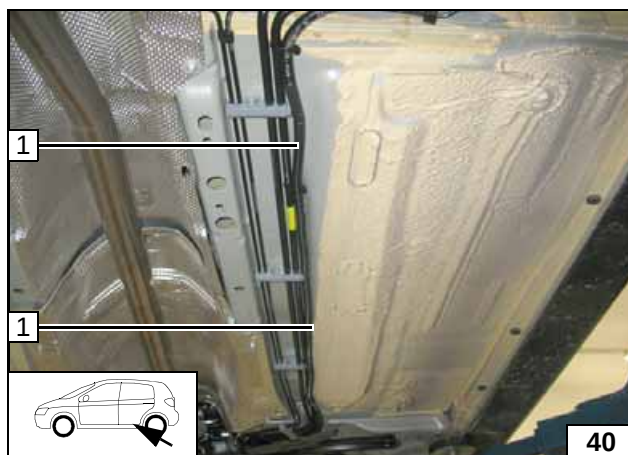
Complete connector of metering pump after routing. Pin assignment is not relevant.

- 1 Connector housing
- 2 Lock
- 3 Blue/brown (bl / br) wires
- 4 Coding
- 5 Time lock



Draw wiring harness of metering pump **3** and fuel line **4** into corrugated tube **1**, route to fire-wall and to original vehicle fuel lines in underbody.

- 2 Cable tie [3x]



- 1 Fuel line and wiring harness of metering pump in corrugated tube

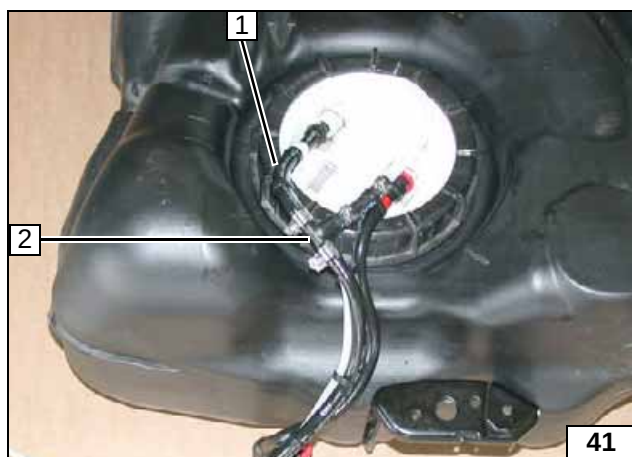
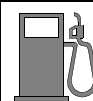


Dismantling connector



Connecting heater

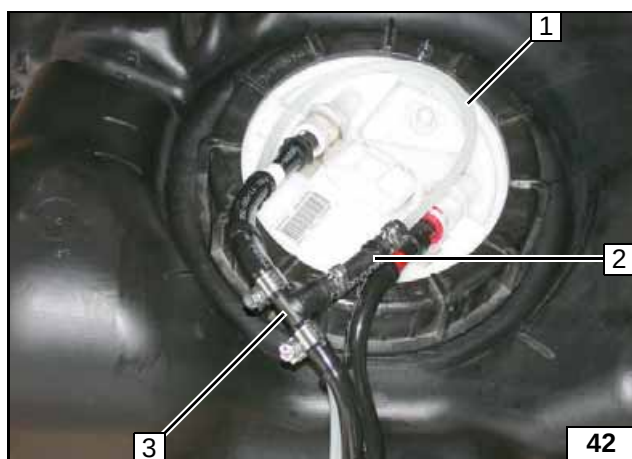
Routing lines



Remove fuel tank according to manufacturer's instructions. Cut off fuel supply line **1** at position **2**.



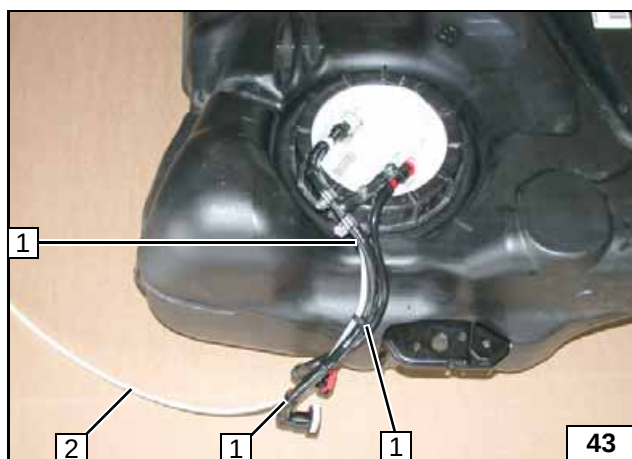
Removing fuel



- 1** Fuel line
- 2** Hose section, 10 mm dia. clamp [2x]
- 3** 8x5x8 fuel standpipe, 10 mm dia. hose clamp [2x]



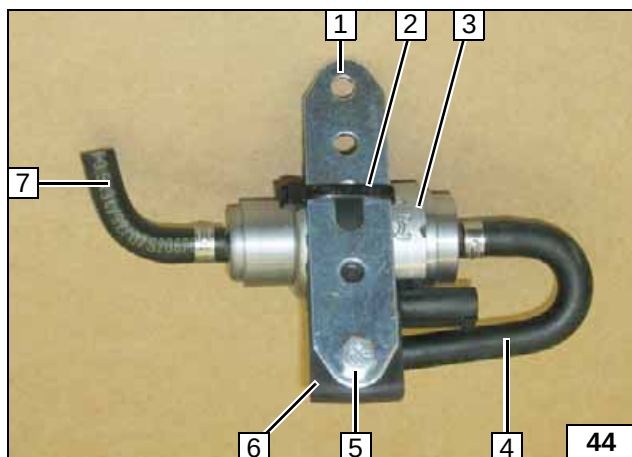
Mounting fuel stand-pipe



Fasten fuel line **1** with cable tie **2**. Mount fuel tank according to manufacturer's instructions.

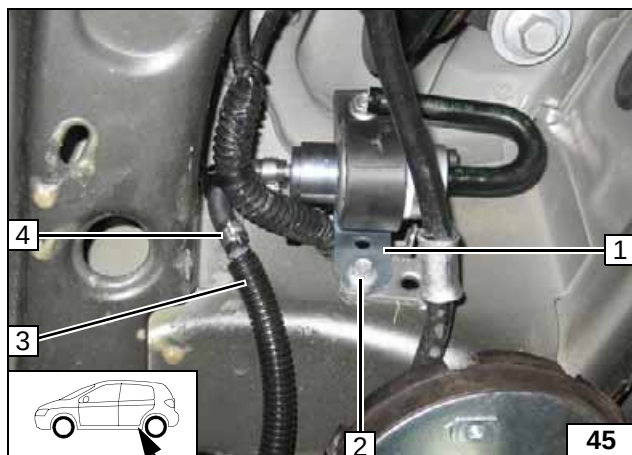


Mounting fuel line



- 1** Perforated bracket
- 2** Cable tie
- 3** Metering pump
- 4** 180° moulded hose, 10 mm dia. clamp
- 5** M6x25 bolt, flanged nut
- 6** Metering pump mount
- 7** 90° moulded hose, 10 mm dia. clamp

Premounting metering pump



- 1 Perforated bracket
- 2 Original vehicle bolt
- 3 Fuel line of fuel standpipe in corrugated tube
- 4 10 mm dia. clamp



Mounting metering pump

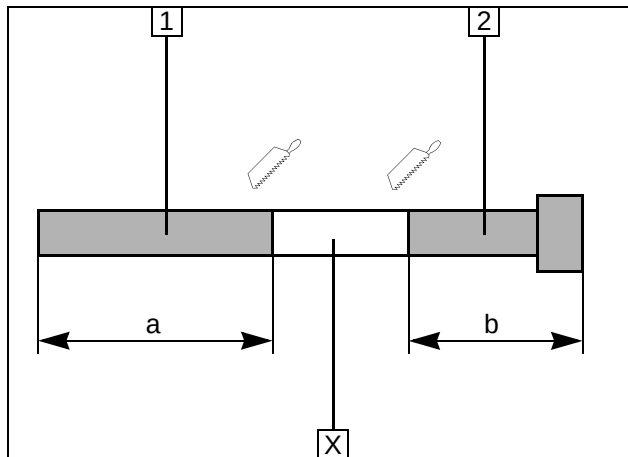


Check the position of the components; adjust if necessary. Check that they have freedom of movement.

- 1 Fuel line from heater
- 2 10 mm dia. clamp
- 3 Cable tie
- 4 Wiring harness of metering pump, connector mounted



Connecting metering pump



Exhaust gas

Discard section X.

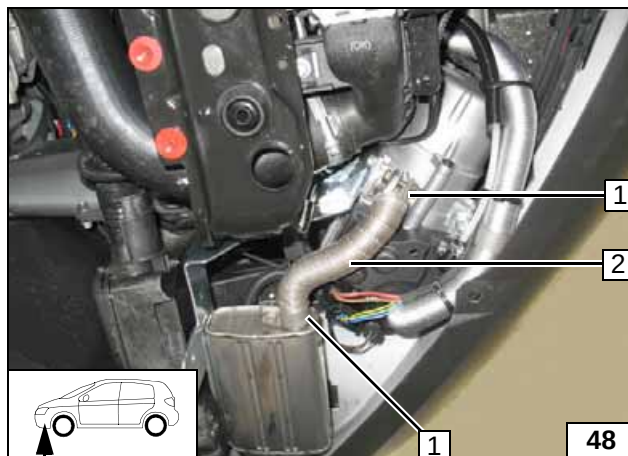
- 1 Exhaust pipe
a = 160
- 2 Exhaust end section
b = 260

Preparing
exhaust
pipe



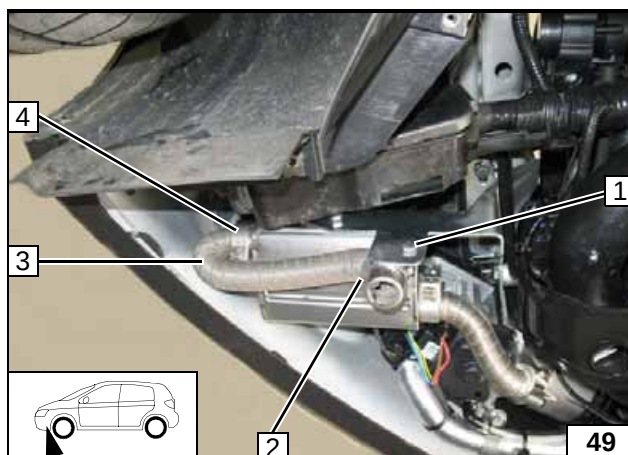
- 1 Exhaust silencer
- 2 M6x15 bolt, spring lockwasher

Mounting
exhaust si-
lencer



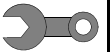
- 1 Hose clamp [2x]
- 2 Exhaust pipe

Attaching
exhaust
pipe



- 1 M6x20 bolt, flanged nut
- 2 P-clamp
- 3 Exhaust end section
- 4 Hose clamp

Mounting
exhaust
end sec-
tion



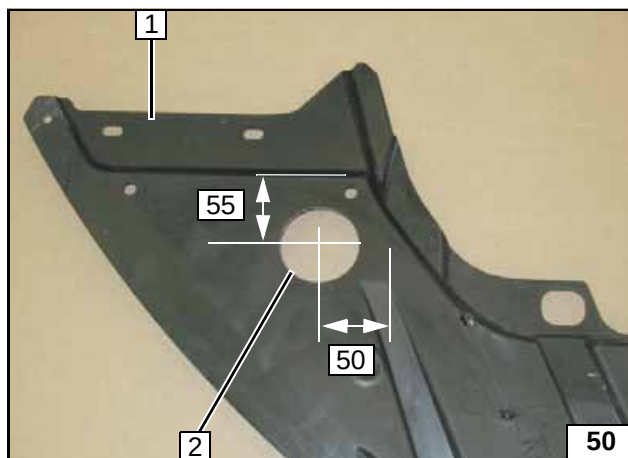
Final Work

WARNING!

Mount removed parts in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back all loose wires.

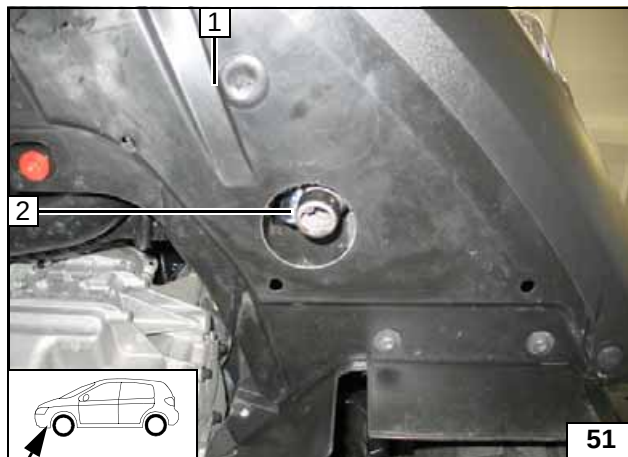
Only use manufacturer-approved coolant. Spray heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- Connect the battery.
- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Adjust digital timer, teach Telestart sender
- Make settings on A/C control panel according to the "Operating Instructions for End Customer".
- Place signboard "Switch off parking heater before refuelling" in the area of the filler neck
- See installation instructions for initial startup and function check



- 1 Underride protection
- 2 60 mm dia. hole

Cutting out
underride
protection



Install underride protection 1. Align exhaust end section 2 flush on underride protection 1. Ensure sufficient distance from neighbouring components.



Aligning
exhaust
end section

Webasto
Feel the drive

Webasto AG
Postfach 80
D-82132 Stockdorf / Germany
National Hotline: 01805 93 22 78
(14 Cent aus dem deutschen Festnetz)
Hotfax: 0395 5592 353
Hotmail: technikcenter@webasto.com
<http://www.webasto.com>

Operating instructions for end customer

Please remove page and add to the vehicle operating instructions.

Note:

We recommend matching the heating time to the driving time.

Heating time = driving time

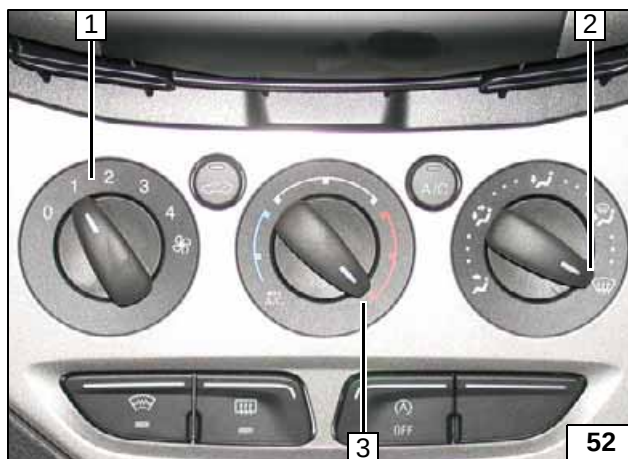
Example:

For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

For vehicles with passenger compartment monitoring this must be deactivated in addition to the vehicle settings for the heating operation.

Instructions for deactivation can be taken from the operating instructions manual of the vehicle.

Before parking the vehicle, make the following settings:



- 1 Set fan to level "1", or max. "2"
- 2 Air outlet to windscreen
- 3 Set temperature to "max."

Manual air conditioning



Fan speed need not be pre-set.

- 1 Set temperature to "HI"
- 2 Air outlet to windscreen

Automatic air-conditioning